

## ABSTRACT

In a method of affecting cleaning or chamber process  
5 control to remove residues of fluorinated discharges from  
internal PECVD chamber hardware during manufacture of a  
semiconductor or integrated circuit, the improvement of removing  
the fluorinated discharges without opening the chamber and  
without causing chamber downtime, comprising:

- 10 a) maximizing H-atom concentration in a gas mix of a  
plasma containing  $H_2$  through the use of high rf  
power and low pressure to obtain an in-situ  $H_2$   
plasma; and
- b) subjecting a reactor chamber containing build-up  
15 residues from previous chamber treatment with a  
fluorinated plasma, with the in-situ  $H_2$  plasma from  
step a) without opening the chamber and without  
shutting down the chamber to remove the build-up  
residues of the fluorinated plasma.

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